

ABSTRACT

A coupon for measuring the corrosion rates of metals in a hostile environment, including two or more thin-film resistive conductors formed on a substrate and positioned in close physical proximity so that they are subjected to essentially the same physical environment. One or more of the thin-film resistive conductors is directly exposed to the potentially corrosive environment while at least one of the thin-film elements is protected from the corrosive nature of the environment. The element or elements that are protected from corrosion are either shielded from the corrosive effects of the environment by the presence of a thermally thin protective layer or by being isolated from the corrosive environment while being maintained at essentially the same temperature as the elements exposed to the corrosive environment. The invention is also directed to a system for measuring the corrosion rate by measuring the change in resistance of the exposed conductor in comparison to the protected chamber.